1. REPAIR GUIDE

1-1. Precautions and Suggestions for Disassembly and Reassembly of the Main Body

The numbers in bold below correspond to the item numbers in the Parts List and exploded assembly diagrams.

1-1-1. Disassembly

- Piston and striker o-rings

  Remove the four Nylock Bolts (W/Flange) M6 x 25 **[27]** from the Cylinder Case Ass'y **[26]**, and disassemble the Cylinder Case Ass'y **[26]** from the Crank Case **[46]**. As the Piston **[33]** remains in the Crank Case side, only the Connecting Rod **[35]** need be removed from the Crank Shaft **[39]**. The Striker **[30]** can be removed by tapping the Cylinder Case Ass'y lightly with a plastic hammer. If it dose not come out easily, push the reassembled Connecting Rod and Piston back into the Cylinder, and pull them apart again quickly. The Striker should come out at the same time.

- First gear disassembly

  Remove the grease from the First Gear **[50]** side of the Crank Case **[46]**. Then, use a bearing puller (Special repair tool J-30, Code No. 970804), to remove the First Gear. (See Fig. 11.)

  Be particularly careful during disassembly. The Ball Bearing **[42]** of Crank Shaft **[39]** is secured by a C-Type Retaining Ring **[41]**. If removal is attempted by applying pressure on the end surface of the Crank Shaft **[39]** with a hand press, as is commonly done with conventional hammers, the C-Type Retaining Ring will be damaged.

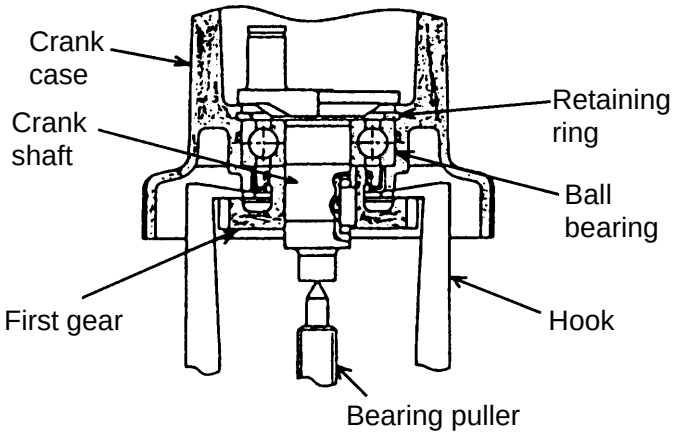


Fig. 11

- Retainer disassembly (See Fig. 12 and Fig. 13)

  Grip (A) **[2]** fully in direction indicated by the arrow as shown in Fig. 12 and remove the Front Cap **[1]** (since the Front Cap is made of rubber, grasp its outer face and strongly pull it to remove). This allows Grip (A) to be separated from the Retainer Sleeve **[18]**.

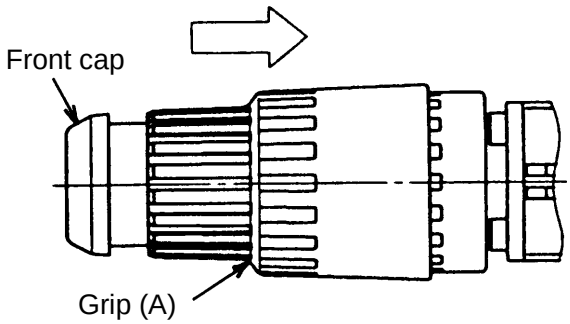


Fig. 12

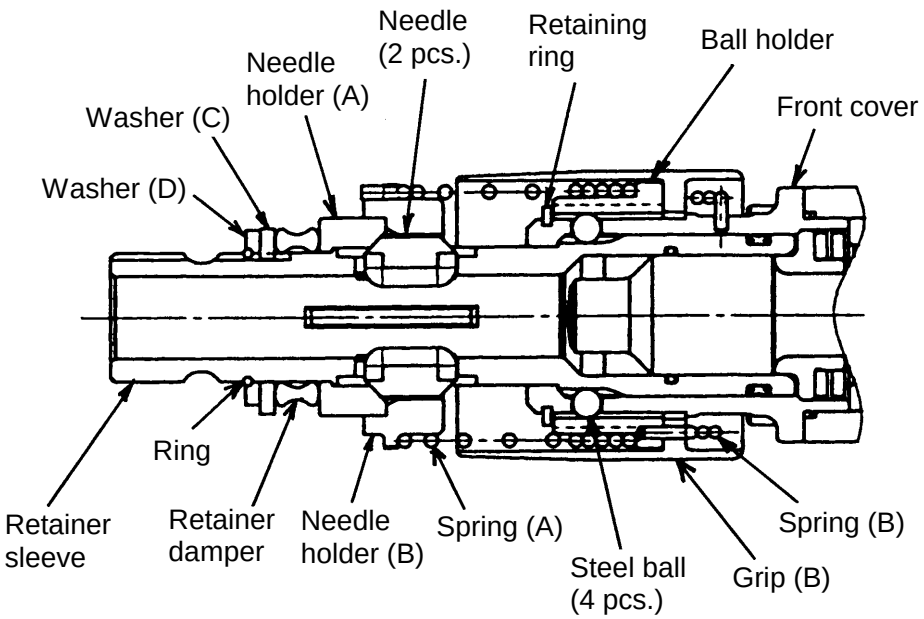


Fig. 13

when the Ring **[3]** is removed by means of the snap ring remover, Washer (D) **[4]**, Washer (C) **[5]**, Retainer Damper **[6]**, Needle Holder (A) **[7]**, Needle Holder (B) **[9]**, Needle **[8]** (2 pcs.) and Spring (A) **[10]** can be removed from the Retainer Sleeve **[18]**. Furthermore, when the S-Type Retaining Ring **[11]** is removed by means of the snap ring remover, Ball Holder **[12]**, Grip (B) **[13]**, Steel Ball **[15]** (4 pcs.) and Spring (B) **[14]** can be removed from the Front Cover **[17]** (Fig. 13).

1-1-2. Reassembly

Reassembly can be accomplished by following the disassembly procedures in reveres. However, Special attention should be given to the following items.

- Lubrication

  Apply special grease (grease for electric impact drills) to the inner portion of the Connecting Rod **[35]**, the O-Ring **[31]** of Striker **[30]** and Piston **[33]**, the outside diameter portion of Retainer Sleeve **[18]**, the sliding portion of Second Hammer **[21]**, and Oil Seal **[44]**. Seal 37 g of special grease inside the Crank Case **[46]** (Connecting Rod **[35]** side). Apply Hitachi Motor Grease No. 29 to the Needle Bearing (M661) **[52]** and the pinion portion of the Armature **[64]**. Insert 20 g of Hitachi Motor Grease No. 29 into the Crank Case **[46]** (First Gear **[50]** side).

- Oil Seals

  Be very careful not to damage the Crank Cover O-Ring **[38]**, the Piston and Striker O-Rings **[31]**, Crank Case Oil Seal **[44]**, the Cylinder Case Ass'y O-Ring **[29]**, Front Cover O-Ring **[25]**, Retainer Sleeve O-Ring **[19]** and X-Ring **[20]**.

● Reassembly of the variable lock mechanism (See Fig. 14)

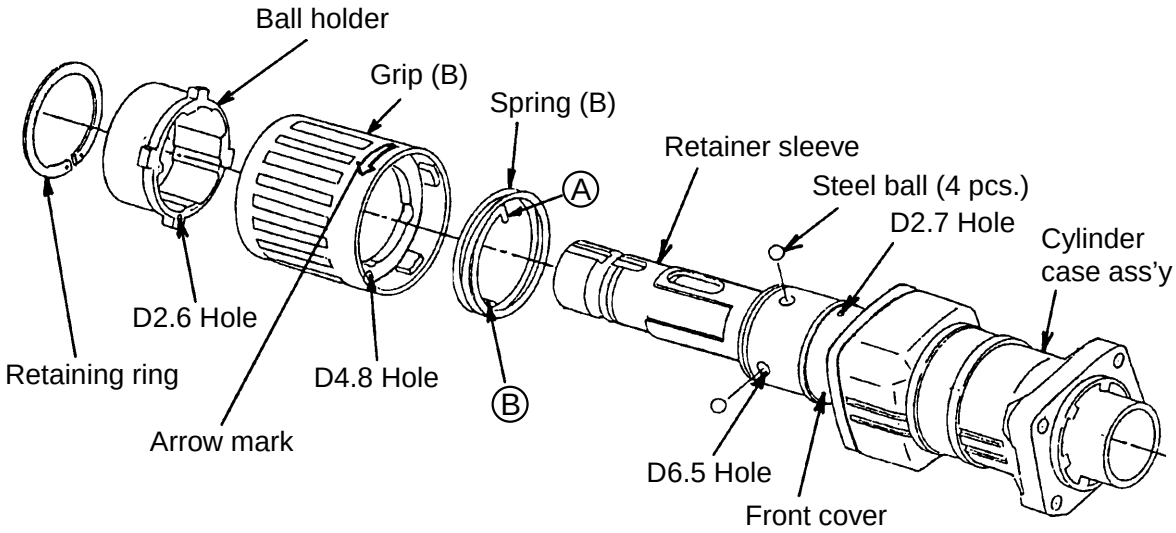


Fig. 14

Mount the Front Cover **[17]** to the Cylinder Case Ass'y **[26]** positioning the D2.7 hole to the top. Turn the Retainer Sleeve **[18]** so that the Steel Ball **[15]** is inserted in the D6.5 hole of the Front Cover **[17]** to the deepest position. Fix the Steel Ball **[15]** in the D6.5 hole with grease. Insert the Ⓐ portion of Spring (B) **[14]** in the D2.7 hole of the Front Cover **[17]** and then fit the Ⓑ portion in the D4.8 hole of Grip (B) **[13]**. Turn Grip (B) **[13]** about 40° in the direction of the arrow while pressing against the Cylinder Case Ass'y **[26]**. Holding this arrangement, insert the Ball Holder **[12]** in the Grip (B) **[13]** so that the Ⓑ portion of Spring (B) **[14]** is inserted in the D2.6 hole of the Ball Holder **[12]** and fix them with the Retaining Ring **[11]**. Check that the Grip (B) **[13]** goes back to the original position by itself when S-Type turning Grip (B) **[13]** 60° in the direction of the arrow and releasing the hand.

1-1-3. Screw Locking Agent TB1401

Apply screw locking agent TB1401 to all hex. socket hd. bolts M4 and M5. (As the hex. socket hd. bolts for M7 that secure the front cover and hex. socket hd. bolts M6 that secure the cylinder case are special bolts, they cannot be re-used if loosened. Accordingly use fresh service parts only for M6 and M7 nylock bolts.)

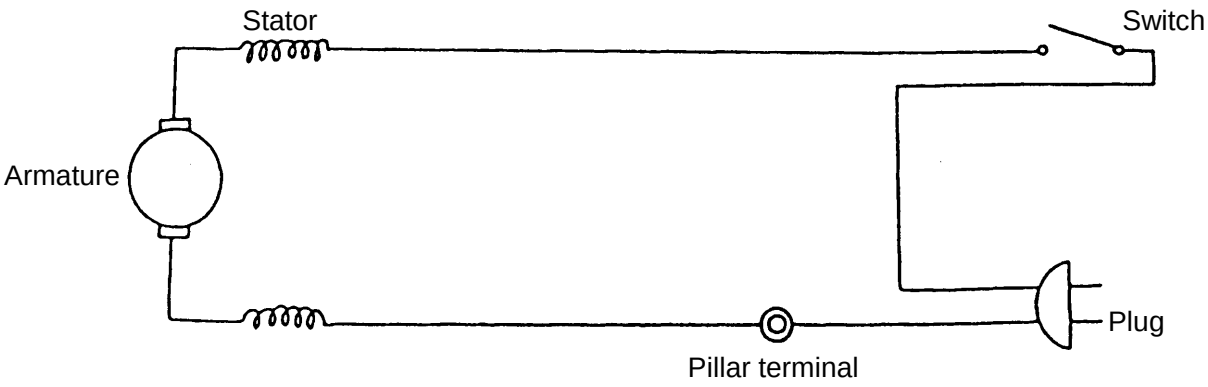
Note : If bolts are loosened by vibration, it could cause damage to the hammer. Ensure without fail that screw locking agent is applied to threaded portions prior to assembly except to the fresh nylock bolts M6 and M7.

1-1-4. Tightening Torque

(1) Hex. socket hd. bolts M4	$4.41 \pm^{0.49}$ N·m ($45 \pm^{5}$ kgf·cm) ($39.1 \pm^{4.3}$ in-lbs.)
(2) Hex. socket hd. bolts M5	$4.9 +^{1.96}_{0}$ N·m ($50 +^{20}_{0}$ kgf·cm) ($43.4 +^{17.4}_{0}$ in-lbs.)
(3) Tapping screws D4	$1.96 \pm^{0.49}$ N·m ($20 \pm^{5}$ kgf·cm) ($17.4 \pm^{4.3}$ in-lbs.)
(4) Tapping screws D5	$2.94 \pm^{0.49}$ N·m ($30 \pm^{5}$ kgf·cm) ($26.1 \pm^{4.3}$ in-lbs.)
(5) Hex. socket hd. bolts (W/Flange) M5	$5.88 +^{0.98}_{-0.49}$ N·m ($60 +^{10}_{-5}$ kgf·cm) ($52.1 +^{8.7}_{-4.3}$ in-lbs.)
(6) Attached bolts of front cover (Hex. socket hd. bolts M7 x 25)	$19.6 +^{0.98}_{0}$ N·m ($200 +^{10}_{0}$ kgf·cm) ($173.6 +^{8.7}_{0}$ in-lbs.)
(7) Attached bolts of cylinder case (Hex. socket hd. bolts M6 x 25)	$9.8 +^{1.96}_{0}$ N·m ($100 +^{20}_{0}$ kgf·cm) ($86.8 +^{17.4}_{0}$ in-lbs.)

1-1-5. Wiring Diagrams

- For products without noise suppressor



- For products with noise suppressor

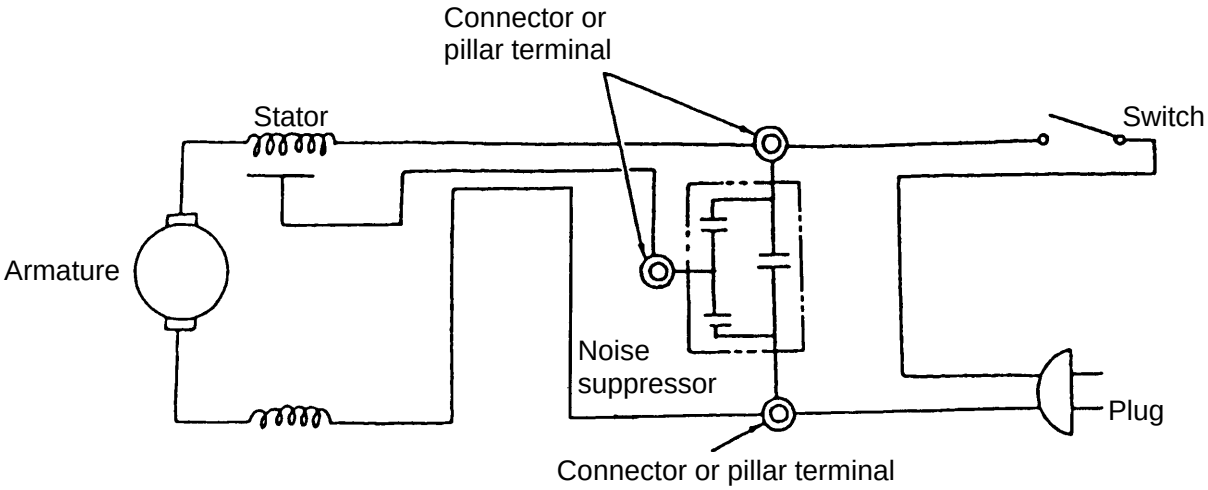


Fig. 15

1-1-6. Insulation Tests

On completion of disassembly and repair, measure the insulation resistance and dielectric strength.

Insulation resistance: 7 MΩ or more with DC 500 V Megohm Tester.

Dielectric strength:	AC 4000 V/1 minute, with no abnormalities	220 V - 240 V (and 110 V for U.K. products)
	AC 2500 V/1 minute, with no abnormalities	110 V - 127 V (except U.K. products)

1-1-7. No-Load Current Value

After no-load operation for 30 minutes, the no-load current value should be as follows:

Voltage	110 V	115 V	230 V	240 V
Current (Max.)	4.5 A	4.3 A	2.2 A	2.1 A

2. STANDARD REPAIR TIME (UNIT)SCHEDULES